REMARKS

A clerical error in claim 1 has been corrected.

In response to the provisional double rejection with regard to co-pending application 11/295,689 filed December 7, 2005, applicant notes it is a provisional rejection and awaits an actual rejection of the present application based on double patenting before submitting a response.

Applicant traverses the rejection of claims 1-4, 6 and 7 under 35 USC 103(a) as being obvious as a result of the Luk et al. article, in view of Griniasty (US 2003/0088416). Pages 19-23 of the Office Action appear to be merely copies of paragraphs [0002, 0029, 0016, 0017] of Griniasty, without connecting them with the last two paragraphs of claim 1 that are partly copied in the office action.

Griniasty only discloses training a text-to-phoneme parser by using information within a known phonetic dictionary. "To initiate the training process, a phonetic dictionary is first provided that includes pronunciations for a given vocabulary of words (block 32). This dictionary may include, for example, any of a variety of commercially available phonetic dictionaries [0013]. In one implementation, the Carnegie Mellon University (CMU) Pronouncing Dictionary is used" [0013, 0023]. "Linear segmentation is first performed on the words of the phonetic dictionary based on the corresponding pronunciations in the dictionary (block 34). During linear segmentation, each word is divided linearly into chunks, with the number of chunks equaling the number of phonemes in the corresponding dictionary pronunciation" [0014].

Therefore, Griniasty starts training of a text-to-phoneme parser by incorporating a partition of words into phonemes. In the example of table 66 in figure 5 [0015], by using the initial emission probability matrices, a supervised segmentation is next performed to segment the word "LOCATION" in the dictionary into its corresponding individual phonemes (block 38) by using a known string of phonemes "(L) (OW) (K) (EY) (SH) (AH) (N)" obtained from the phonetic dictionary, as shown along the vertical axis of the table 66.

Therefore, Griniasty does not disclose the first step in claim 1, i.e., entering global transcriptions of said graphic chains into said phonetic chains into a database accessible

by said computer. An example of a graphic chain (CG) is the word "LOCATION" in a predetermined language., The phonetic chain for LOCATION' is "LOWKEYSHAHN" in English (step E1, page 6, lines 5-24 of the present application). In the first step in claim 1, the segmentation of the chain CG into syllables or into graphemes, each comprising one or more graphic elements, and the segmentation of the chain CP into phonemes each comprising one or more phonetic elements are ignored at this stage (page 6, lines 19-24). This is because the method of claim 1 aims to derive automatically from raw transcriptions of graphic chains, for example words and family names, into phonetic chains, transcriptions of graphic elements, for example characters, into phonetic elements forming the phonetic chains, in order to segment any graphic chain into graphemes and any phonetic chain into phonemes automatically (page 2, lines 17-23). In another example on page 4, lines 29-32, the method of claim 1 derives from the raw transcription "ruelle"|[ryɛl] the segmented transcription between the graphic elements "r," "u," "e," "lle" and the respective phonetic elements [r], [y], [ɛ], [l]). In contrast, Griniasty obtains the last segmented transcription from the known phonetic pronouncing dictionary.

For the previous word "LOCATION," the method of claim 1 does not know a priori if the phonetic chain "LOWKEYSHAHN" corresponds to the set of phonetic elements "(L) (OW) (K) (EY) (SH) (AH) (N)" or another set of phonetic elements, for example "(LOW) (KEY) (SH) (AHN)."

Thus Griniasty does not relate to the invention of claim 1 because Griniasty uses initial information that is similar to the result obtained by claim 1, i.e., in order to segment said given graphic chain into graphemes corresponding to respective phonemes segmenting the corresponding phonetic chain and to store the matches between said graphemes and phonemes in said database (claim 1, last paragraph, from line 6).

Furthermore to form table 66 to sum [0016], Griniasty enters probabilities corresponding to single-letter/single-phoneme, such as L|L, O|OW, O|K, C|OW, C|K, i.e. first probabilities of elementary transcriptions of graphic elements into respective phonetic elements as e.g. L|L, L|OW, O|K, C|K. But to form table 66, Griniasty enters probabilities corresponding to multiple-letter/single-phoneme as e.g. LO|L, LOC|L, OC|OW, OC|K, and probabilities corresponding to single-letter/two-phoneme (diphone) as e.g. L|L,OW,

O|OW,K, C|OW,K. In each of the squares of table 66, by starting from left to right and column by column [0015], the letter/phoneme probabilities corresponding to each path of transcription letter-string/phoneme-string leading to the square are summed into scores and the highest score is then recorded [0017].

For a square between the column M and the line N in table 66, the multiple-letter/single-phoneme transcriptions and the single-letter/two-phoneme transcriptions are not MxN second transcriptions of M graphic chains resulting from M successive concatenations of 1 to M graphic elements into N phonetic chains resulting from N successive concatenations of 1 to N phonetic elements, as defined in the fourth paragraph of claim 1.

For example [0017] indicates that, in square 78, the probability that the phoneme "L" will emit the letter string "LOC" is entered, and it is not 3x1=3 second probabilities resulting from 3 successive concatenations L, LO and LOC of 1 to 3 graphic elements L, O and C into 1 phonetic chain having 1 element.

In another example resulting from [0017], the first path (L|L and O|OW,K) coming from square 68 and the second path (L|L,OW and O|K) coming from square 70 that lead to square 76 imply entering the transcription probabilities L|L, O|OW,K, L|L,OW and O|K and particularly entering the single-letter/two-phoneme transcription probabilities O|OW,K and L|L, OW. The latter probabilities are not 2x3=6 second probabilities resulting from 6 successive concatenations L|L, LO|L, L|LOW, LO|LOW, L|LOWK, and LO|LOWK of 1 to 2 graphic elements L and O into 3 phonetic chains resulting from 3 successive concatenations of 1 to 3 phonetic elements , L, OW and K. The higher score for square 68 is equal to the highest of a first sum of: (a) the probability that the phoneme "L" will emit the letter "L" (from square 68) and (b) the probability that the phoneme pair "OW, K" will emit the letter "O," and a second sum of (a) the probability that the phoneme pair "L,OW" will emit the letter "Y" (from square 70) and (b) the probability that phoneme "K" will emit the letter "O." The higher score for square 68 depends on a preceding estimated first probability of last graphic and phonetic elements "O" and "K" of the transcription LO|LOWK, but does not depend on the highest of three respective second probabilities not entered and determined by preceding iterations, as the probabilities of second

transcriptions L|LOWK, LO|LOW AND L|LOW (corresponding to $P(g_1g_2\ldots g_{m-1}|p_1p_1\ldots p_n)$, $P(g_1g_2\ldots g_m|p_1p_2\ldots p_{n-1})$, and $P(g_1g_2\ldots g_{m-1}|p_1p_2\ldots p_{n-1})$ in page 9, lines 23-24 and corresponding to the three second probabilities in claim 3).

As in Luk ("Stochastic phonographic transduction for English"), Griniasty fails to disclose, for each transcription of a given graphic chain with M graphic elements into a corresponding phonetic chain with N phonetic elements, determining by MxN iterations (not entering) second probabilities of MxN second transcriptions of M graphic chains resulting from M successive concatenations of 1 to M graphic elements into N phonetic chains resulting from N successive concatenations of 1 to N phonetic elements, each second probability of a second transcription depending on a preceding estimated first probability of last graphic and phonetic element of said second transcription and depending on the highest of three respective second probabilities determined by preceding iterations, M and N being integers.

As in Luk, Griniasty does not disclose a second probability as above defined and therefore does not disclose the last step of claim 1 that depends on the highest of said three respective second probabilities for each second transcription and that relates to establishing and storing a link between the last elements of the graphic chain and the phonetic chain of each second transcription and last elements of the graphic chain and phonetic chain of the transcription that relates to the highest of the three respective second probabilities and depends on three respective second probabilities.

Neither Luk nor Griniasty discloses the last two paragraphs of claim 1. Therefore Applicant disagrees with the contention in the Office Action that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Luk to incorporate the last two paragraphs of claim 1 as taught by Griniasty.

Independent claim 7 is allowable for the same reasons as discussed in connection with claim 1.

Claims 2-6 depend on claim 1 and are allowable with claim 1. The rejection of claim 5 based on Luk, Griniasty and Junqua et al., USP 6,684,185, is incorrect because Junqua et al. obviously does not cure the deficiencies of the rejection based on Luk and Griniasty.

Allowance is in order.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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